

INTERNATIONAL SEARCH REPORT

International Application No

PCT/JP2005/006004

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C07D491/04 C07D498/04 C07D513/04 C07D515/04 A61K31/436
A61P9/06

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C07D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ, WPI Data, CHEM ABS Data, BEILSTEIN Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|---|-----------------------|
| X | EP 0 693 283 A (NISSAN CHEMICAL INDUSTRIES, LIMITED) 24 January 1996 (1996-01-24) page 25, line 44 - line 54; claim 1; examples 1,5-9,16,19-24,47,51,55,58 | 1-55 |
| X | EP 0 488 107 A (E.R. SQUIBB & SONS, INC) 3 June 1992 (1992-06-03) page 9, line 40 - line 42; claim 1; examples 1,2 | 1-55 |
| X | EP 0 327 127 A (NISSAN CHEMICAL INDUSTRIES LTD) 9 August 1989 (1989-08-09) page 13, line 49; claim 1; examples 1-20 | 1-55 |
| | -/-- | |

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

* Special categories of cited documents:

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
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- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
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Date of the actual completion of the international search

8 August 2005

Date of mailing of the international search report

26 08. 2005

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|--|-----------------------------|
| X | EP 0 409 165 A (NISSAN CHEMICAL INDUSTRIES LTD) 23 January 1991 (1991-01-23) referential example 1-6, claim 1; example 1; tables 1,2 | 1-35, 49-51, 54,55 |
| X | PATENT ABSTRACTS OF JAPAN vol. 014, no. 131 (C-0700), 13 March 1990 (1990-03-13) -& JP 02 004791 A (NISSAN CHEM IND LTD), 9 January 1990 (1990-01-09) abstract; claim 2; compounds 7,16 | 1-35, 49-51, 54,55 |
| X | WO 95/34547 A (SMITHKLINE BEECHAM PLC; VONG, ANTONIO, KUOK, KEONG; THOMPSON, MERVYN;) 21 December 1995 (1995-12-21) claim 1; example 17 | 1-35, 37-48, 52,54,55 |
| X | CHAN W N ET AL: "Conformational preference of the 6-acetyl group in novel anticonvulsant trans 4S-benzamido-benzo[b]pyran-3R-ols" BIOORGANIC & MEDICINAL CHEMISTRY LETTERS, OXFORD, GB, vol. 7, no. 12, 17 June 1997 (1997-06-17), pages 1573-1576, XP004136259 ISSN: 0960-894X compounds 4,5,9 | 1-55 |

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Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☒ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☒ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-35,49-51,54,55

compounds of formula (I) with $R_3=OH$ and A=5-membered ring

2. claims: 1-35,37-48,52,54,55

compounds of formula (I) with $R_3=OH$ and A=6- or 7-membered ring

3. claims: 1,2,54,55

compounds of formula (I) with $R_3=alkylcarbonyloxy$ and A=5-membered ring

4. claims: 1,2,54,55

compounds of formula (I) with $R_3=alkylcarbonyloxy$ and A=6- or 7-membered ring

5. claims: 1,2,54,55

compounds of formula (I) with $R_3+R_4=bond$

6. claims: 1-34,36-55

compounds of formula (II)

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/JP2005/006004

| Patent document cited in search report | | Publication date | Patent family member(s) | Publication date |
|---|---|---------------------|----------------------------|---------------------|
| EP 0693283 | A | 24-01-1996 | AU 677643 B2 | 01-05-1997 |
| | | | AU 6292794 A | 24-10-1994 |
| | | | CA 2158931 A1 | 13-10-1994 |
| | | | CN 1120313 A | 10-04-1996 |
| | | | CZ 9502540 A3 | 17-01-1996 |
| | | | EP 0693283 A1 | 24-01-1996 |
| | | | HU 73971 A2 | 28-10-1996 |
| | | | JP 7300414 A | 14-11-1995 |
| | | | WO 9422442 A1 | 13-10-1994 |
| | | | NO 953860 A | 28-11-1995 |
| | | | NZ 262960 A | 24-06-1997 |
| | | | RU 2128043 C1 | 27-03-1999 |
| | | | SK 117195 A3 | 09-04-1997 |
| | | | TW 384291 B | 11-03-2000 |
| | | | US 5919806 A | 06-07-1999 |
| | | | ZA 9402316 A | 30-09-1995 |
| EP 0488107 | A | 03-06-1992 | US 5164509 A | 17-11-1992 |
| | | | CA 2054638 A1 | 27-05-1992 |
| | | | EP 0488107 A2 | 03-06-1992 |
| | | | JP 4290876 A | 15-10-1992 |
| EP 0327127 | A | 09-08-1989 | AT 66481 T | 15-09-1991 |
| | | | AU 2963389 A | 03-08-1989 |
| | | | BG 50159 A3 | 15-05-1992 |
| | | | BR 8905292 A | 21-08-1990 |
| | | | CA 1331990 C | 13-09-1994 |
| | | | CN 1037150 A ,C | 15-11-1989 |
| | | | DD 290886 A5 | 13-06-1991 |
| | | | DD 295383 A5 | 31-10-1991 |
| | | | DE 68900210 D1 | 26-09-1991 |
| | | | DK 1693 A | 07-01-1993 |
| | | | DK 169924 B1 | 03-04-1995 |
| | | | DK 486089 A | 01-12-1989 |
| | | | EP 0327127 A1 | 09-08-1989 |
| | | | ES 2039292 T3 | 16-09-1993 |
| | | | FI 894520 A ,B, | 25-09-1989 |
| | | | GR 3002637 T3 | 25-01-1993 |
| | | | HU 56373 A2 | 28-08-1991 |
| | | | HU 206117 B | 28-08-1992 |
| | | | JP 1971114 C | 27-09-1995 |
| | | | JP 2049788 A | 20-02-1990 |
| | | | JP 6099439 B | 07-12-1994 |
| | | | JP 2104589 A | 17-04-1990 |
| | | | JP 2762509 B2 | 04-06-1998 |
| | | | WO 8907103 A1 | 10-08-1989 |
| | | | KR 9709591 B1 | 14-06-1997 |
| | | | NO 893917 A ,B, | 02-10-1989 |
| | | | NO 932720 A ,B, | 02-10-1989 |
| | | | RO 105697 B1 | 30-11-1992 |
| | | | RO 109077 B1 | 30-11-1994 |
| | | | RU 2054007 C1 | 10-02-1996 |
| | | | US 4900752 A | 13-02-1990 |
| | | | ZA 8900860 A | 25-10-1989 |
| | | | JP 1316384 A | 21-12-1989 |
| | | | JP 2773181 B2 | 09-07-1998 |
| | | | JP 1316385 A | 21-12-1989 |
| | | | JP 2762512 B2 | 04-06-1998 |

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/JP2005/006004

| Patent document cited in search report | | Publication date | Patent family member(s) | Publication date |
|---|---|---------------------|----------------------------|---------------------|
| EP 0409165 | A | 23-01-1991 | AT 121404 T | 15-05-1995 |
| | | | AU 621502 B2 | 12-03-1992 |
| | | | AU 5905890 A | 17-01-1991 |
| | | | CA 2021337 A1 | 18-01-1991 |
| | | | CN 1048855 A , C | 30-01-1991 |
| | | | DE 69018716 D1 | 24-05-1995 |
| | | | DE 69018716 T2 | 12-10-1995 |
| | | | EP 0409165 A2 | 23-01-1991 |
| | | | HU 57775 A2 | 30-12-1991 |
| | | | US 5097037 A | 17-03-1992 |
| | | | US 5319089 A | 07-06-1994 |
| | | | DD 295382 A5 | 31-10-1991 |
| | | | JP 2876712 B2 | 31-03-1999 |
| | | | JP 3141286 A | 17-06-1991 |
| | | | RU 2026297 C1 | 09-01-1995 |
| | | | RU 2045530 C1 | 10-10-1995 |
| JP 02004791 | A | 09-01-1990 | JP 2658198 B2 | 30-09-1997 |
| WO 9534547 | A | 21-12-1995 | DE 69518322 D1 | 14-09-2000 |
| | | | DE 69518322 T2 | 15-02-2001 |
| | | | WO 9534547 A1 | 21-12-1995 |
| | | | EP 0764159 A1 | 26-03-1997 |
| | | | JP 10501256 T | 03-02-1998 |
| | | | US 5843989 A | 01-12-1998 |